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Accord Expected to Offset Missile Totals and Power

By BERNARD GWERTZMAN
Special to The New York Times

WASHINGTON, May 23. — The United States and the Soviet Union have all but concluded agreements on limiting some strategic nuclear arms that would give the Russians a possible numerical edge in the number of land-based and sea-based missiles, Congressional and Administration officials said today.

But a senior Administration official said that the potential Soviet lead in individual missiles would be more than offset by American superiority in multiple-warhead technology, and that this would allow the United States to maintain a substantial advantage in the number of warheads targeted on the Soviet Union.

Details of the arms-limitation package that is being completed in Helsinki, Finland, for expected signing in Moscow on Friday, were made known to newsmen this morning by Representative John M. Ashbrook of Ohio, President Nixon's conservative challenger for the Republican Presidential nomination.

The Congressman, who opposes Mr. Nixon's conciliatory moves toward the Russians, said that the proposed accord would "doom the United States to nuclear inferiority."

Administration officials, when informed of Mr. Ashbrook's remarks, did not deny their accuracy. But the officials sharply rebutted his interpretation of the proposed accord, whose full details have not been made public by the Administration.

A senior Administration official said that "what is frequently forgotten" is that the United States, through its ability to mount multiple warheads on individual missile launchers, will have a sizable advantage in the number of actual projectiles that could be launched.

Big Lead in Warheads

He said that by the end of 1972 the United States would have 5,700 warheads as against the Soviet Union's 2,500. These multiple warheads are known as multiple independently targeted re-entry vehicles, or MIRV's, and these, the official noted, the Russians have not yet been able to develop.

Mr. Ashbrook and Administration officials both said that the accord would consist of two parts.

The first, in the form of a treaty, requiring Senate approval, would limit the deployment of antiballistic or defensive missiles to two sites and 200 launchers in each country. One site would defend the capital, and the other would defend an offensive missile pad somewhere in the country.

The second part of the projected accord, taking the form of a five-year "executive agreement," would allow the Soviet Union and United States to retain their current levels of land-based missiles; at present the Soviet Union has a sizable numerical advantage, 1,618 to 1,054.

The United States currently has a substantial lead in submarine launched missiles. It has 41 submarines equipped with 656 missile launchers. They have longer range and are more difficult to detect than the 25 Soviet submarines of the Y class in operation and the 17 or so under construction, which combined have a total of about 650 missile launchers.

The "executive agreement" would allow the Russians to complete the submarines now being built. But would also allow them further options that could give them a numerical lead over the Americans.

Ashbrook Apparently Troubled

Mr. Ashbrook, who said he had learned of the contents of the prospective accord last Friday from "a highly placed and respected source" and had since confirmed his information with "exceptionally well-informed" legislators, seemed most disturbed by the options to be included in the "executive agreement."

To get the Russians to agree to a submarine freeze at a time when the Americans have a substantial lead in the field, the United States has apparently accepted a rather complicated set of options.

The Soviet Union has 31 older submarines of the G and H classes that fire three or four missiles apiece. Under the "executive agreement," the Russians could replace the approximately 100 missile launchers aboard those vessels by building additional submarines of the Y class. This would allow the Russians to build and increase the number of sea-launched missiles covered by the accord to about 750.

Possible Future Strength

In addition, the arms limitation accord would allow the two sides to "cash in" certain obsolete land-based missiles for additional submarine-launched ones. The Soviet Union could retire some 200 of its oldest SS-7 and SS-8 land-based missiles and build 16 or 17 new submarines.

Thus, if the Russians took advantage of all options, it could have about 65 modern submarines and about 950 submarine-launched missiles. The United States could "cash in" some 54 Titan missiles and build three new submarines—something not currently planned, giving it a total of 44 submarines and 700 missile launchers.

Administration officials say they doubt that the Russians would take advantage of every option open to them or could even carry out such an expanded building program in the five-year period.

The senior Administration official, who asked not to be identified, said that the projected strategic-arms agreement would have the effect of slowing down and in some cases halting the Soviet missile-building program while not putting any ceiling on the number of multiple warheads, in which the United States excels.

Representative Ashbrook noted in his news conference that the proposed agreement did not cover bomber aircraft or the multiple-headed warheads, but he said that if the Soviet Union gained the technology to build MIRV's it could take an overall lead in "deliverable warheads" of "not less than 5 to 1" by the time the "executive agreement" would expire in 1977.

But the senior Administration official said that the United States would continue to have an advantage in this technology for the foreseeable future, and at least until the agreement ended.

Presumably, the two sides would seek in the next stage of the talks on limiting strategic arms to reach accords on the MIRV's and to reduce the arsenals of both countries.

Further Ashbrook Criticism

Mr. Ashbrook criticized the proposed defensive missile treaty, which would limit protection to the capitals and to one offensive missile site in each country. At present, the Russians have a ring of antiballistic missiles around Moscow, while the United States

has started construction of such missiles at Grand Forks Air Force Base in North Dakota.

Under the terms of this treaty, Mr. Ashbrook said, the United States would be obliged to stop work on another antiballistic missile site at Malmstrom Air Force Base in Montana. He said that "in view of offensive missile technology, this is no protection at all."

The Nixon Administration has never asserted that the limited antiballistic missiles would provide much protection. Some Congressional opponents of deploying them have said that they were a waste of money. And some Administration officials believe that there may be trouble persuading Congress to appropriate funds for an antiballistic missile system around Washington.

Mr. Ashbrook also criticized the proposed agreement for not calling for any on-site inspection. The Administration, in the face of long-standing Soviet refusal to agree to any on-site inspection, has asserted that it could adequately detect any possible violations of the proposed accords through satellite and electronic means. The treaty and the "executive agreement" would have escape clauses in case of Soviet violation.

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FYI - This is a very accurate re. cash of the SALT situation - Jm

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LAIRD DISCLOSES SOVIET MIRV TEST TO SENATE PANEL

Committee Is Told Moscow
Is 2 Years Behind U.S. in
Warhead Technology

By BERNARD GWERTZMAN
Special to The New York Times

WASHINGTON, June 8—Secretary of Defense Melvin R. Laird in secret testimony before the Senate Armed Services Committee, has disclosed that the Soviet Union is flight-testing a missile that can fire several warheads at individual targets. Thus far, such missiles have remained an American monopoly.

The disclosure that the Russians have begun testing what is known as the MIRV—or multiple independently targeted re-entry vehicle—was made by Mr. Laird in answer to a Senator's question on the Soviet advances in this field. His remarks were made known by a Senate source and confirmed by Jerry W. Friedhelm, the Pentagon spokesman.

Mr. Laird said, however, that the Russians still lagged about two years behind the United States in warhead technology and that there was no indication that they planned to deploy the multiple warheads.

The question of Soviet technology and intentions has revived because of the agreements limiting strategic arms that were signed in Moscow 13 days ago.

Fewer Missiles for U.S.

In the five year executive agreement limiting the land-based and submarine-launched missiles allowed each side, the United States agreed to accept fewer missiles than the Soviet Union. Administration spokesmen have defended the decision on the ground that the United States, because of its edge

in warhead technology, possesses about 57,000 warheads to 2,500 for the Soviet Union.

Critics of the agreement, such as Senator Henry M. Jackson, Democrat of Washington, have maintained that once the Russians caught up in technology they could gain an immense edge not only in missile launches, but in warheads as well.

Previously, the Defense Department had said only that the Russians were working on a MIRV system and had conducted tests with a less complicated multiple warhead known as MRV or multiple re-entry vehicle. MRV warheads, unlike MIRV's are not targeted independently, but are scattered randomly over an area, much like buckshot.

In his statement to Congress in February, Mr. Laird said the Russians "probably have not tested MIRV missiles thus far."

He made his disclosure about the current testing at a closed session of the Senate Armed Services Committee on Tuesday.

The Russians already possess an edge in the amount of nuclear destruction they could cause.

A few hours before word of

the Laird testimony today, Gerard C. Smith, Director of the Arms Control and Disarmament Agency, made a speech in which he asserted that the Soviet Union was so far behind the United States that it had not yet even tested the multiple warhead system.

Mr. Smith, speaking at a foreign policy conference for businessmen, at the State Department made it clear that he supported the view expressed publicly by Mr. Laird a few days ago that the United States must maintain a high level of military spending on programs not barred by the arms agreements.

Mr. Laird, in remarks to reporters Tuesday, said he could not support the agreements unless Congress appropriated funds for a new submarine system, a new long-range bomber aircraft and other strategic weapons not specifically banned. This spending "gives us the opportunity to be in a position where we can bargain from a strong position" in the second phase of strategic arms talks, looking toward a treaty limiting offensive weapons, Mr.

Today Mr. Smith said the United States cannot afford to coast along now that initial agreements have been reached. He said the United States must pay attention and money to

maintaining stability in the strategic arms balance.

He strongly defended the treaty, which limits the Soviet Union and the United States to two defensive missile sites of 100 missiles each.

Mr. Smith, the chief United States negotiator at the strategic arms talks, said the treaty insured that neither side could rationally decide to launch a nuclear attack on the other without a nationwide net of defenses, it is explained, there would be no way to defend against even a weak retaliation.

Asked about the Soviet superiority in numbers of missiles, Mr. Smith said that the United States maintained a warhead lead. But he said that he recognized that the Russians could catch up during the five-year period. For that reason, he said, he hoped that a lasting treaty on offensive weapons, including multiple warheads, could be achieved before the accord runs out.

Mr. Laird, in previous public statements, had indicated that the Russians were working on a multiple warhead. Testifying in public session before the House Appropriations Committee on Monday, he said he expected them to have MIRV capability in 12 to 14 months.

Administration sources said they expected that the arms-limitation agreements would be sent to Congress early next week for action. The Senate

must approve the treaty by a two-thirds vote; both houses must approve the five-year executive agreement by majority vote.

The remarks by Mr. Smith suggested that the Administration had decided not to appear

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Soviets Revamping Missile Submarines

By Michael Getler

Washington Post Staff Writer

The Soviet Union has started building what appears to be the first of a modified class of missile-firing submarines which will carry fewer but longer-range missiles than the current Soviet undersea fleet, according to U.S. sources.

The new submarines will each carry 12 of the new SS-N-8 missiles. Under the U.S.-U.S.S.R. nuclear arms accord they could be used to replace an equivalent number of older land or sea-based missiles.

The new missile has a range estimated at about 3,500 miles, more than twice that of the

missile now installed on Russia's "Y" class subs.

The Soviets have about 25 "Y" class subs operating, with another 17 or 18 under construction. Each of the Y-class subs carries 16 missiles with a range of about 1,500 miles.

The Soviet Y-class subs are roughly equivalent in performance to the earliest models of the U.S. Polaris-equipped submarines, and it had been anticipated that the Russians would eventually take steps to introduce improved versions.

The U.S. fleet of 41 missile-firing submarines—including those wielding later models of Polaris and the 3,000-mile-range, multiple-warhead Poseidon missiles—are judged to be far superior to their current Soviet counterparts.

Evidence that the Russians

are now building a new sub ends a puzzle about where the Russians were going to put their new SS-N-8 missile.

The missile had been observed by the United States during extensive flight tests for more than a year. But in March, the Pentagon's top scientist, Dr. John S. Foster, told the Senate Armed Services Committee that the Pentagon had not yet figured out if the Soviets had a "platform" for it. The missile is longer than the type used in the Y-class and could not fit into that class of submarine without extensive modification of the vessel.

U.S. officials say it now appears that the Russians have decided to modify the basic Y-class submarine to handle the bigger missile.

Some U.S. officials express

surprise that the Soviets chose to modify the current Y-class production line rather than introduce a completely new submarine which would also show improvements in underwater performance.

Under the U.S.-Soviet strategic arms limitation agreements, the Soviets are limited to a ceiling of 62 submarines and 950 sub-based missiles.

Since 62 submarines with 16 missiles each would put the Russians far over the limit, the Soviets will have to have some vessels with fewer than 16 missiles, or fewer than 62 submarines.

In explaining the complex arms agreement in Moscow last Friday, presidential aide Dr. Henry A. Kissinger conceded that there was a disagreement between the U.S. and

Soviet assessment of how many missile-bearing subs the Russians had operating or under construction.

The Soviets claimed 48 subs with 768 missiles. The U.S. assessment was less. A compromise figure of 710 missiles was reached. The Soviets have the option of adding another 240 sub missiles to this if they decide to retire 210 older land-based ICBMs and 30 older G-class sub-missiles.

LONGER-RANGE MISSILES

Russia Building New Sub

The Soviet Union is building a new class of missile-carrying submarine.

The new submarine, known to American authorities as the Yankee II, will carry 12 rather than the 16 missiles of the Yankee I, Class which is comparable to the American Polaris submarine.

But the missiles have a longer range than those used on the older Yankee class.

Existence of the new submarine was revealed by Dr. Henry

A. Kissinger, presidential adviser on national security affairs, in a press conference in Moscow shortly after the U.S.-Soviet agreement on a strategic arms limitations was reached on Friday. A transcript of the press conference has just become available in Washington.

The fact that the Soviets have under construction a new class of submarines provides the answer to a question that has puzzled American defense experts for a number of years.

The Russians have been testing, and have even displayed in a Moscow parade, a new submarine-launched missile with a range greater than the missile carried by the older Yankee class. But, by U.S. calculations, the missile appears to be too big to be fitted into the original Yankee class submarines.

Recent tests monitored by the United States have indicated that the new missile might have a range of as much as 3,500 miles. This would be farther than any missile now deployed at sea by the United States but substantially less than other new missiles still under development.

The advantage to the Russians in deploying a new submarine with a longer range missile will be added protection for their submarine fleet. The longer the range of a missile carried by a submarine, the greater area in which the submarine can operate and therefore the greater area which must be searched by an enemy.

Kissinger did not say whether the United States had learned about the new submarine from the Russians during negotiations or whether it was discovered by other means.

He did say, however, that the fact the Russians have two classes of missile submarines complicated the problem of setting a ceiling on missile-carrying submarines in the agreement announced on Friday.

Kissinger said the negotiated limit of 62 such submarines for the Soviets — and a further ceiling of 950 Soviet submarine missiles — means that the Russians will have to decide whether they want to de-

ploy the full number of new submarines (thus carrying fewer missiles) or a smaller number of the older submarines (thus carrying more missiles.)

The United States is beginning development of a new missile-carrying submarine of its own known as the Trident. Under present plans, the Trident would carry 24 missiles with intercontinental range. They would be available about the end of 1978, replacing some older U.S. subs.

The United States has 41 Polaris submarines, each carrying 16 missiles. Of these, 31 are being modernized to carry the multiple-warhead Poseidon missile.

SOVIET PREPARES BIG NEW MISSILE

U.S. Aides Say Tests Could
Be Held Before Nixon's
Journey to Moscow

By WILLIAM BEECHER

Special to The New York Times

WASHINGTON, April 22—

The Soviet Union is preparing to test-fire a new intercontinental ballistic missile that is significantly larger than any now in operation, American analysts said today.

The analysts said that the missile has a diameter of about 12 feet, about a third larger than the SS-9, the biggest Soviet missile that has been deployed.

Although American officials in several branches of Government agree that the new missile could be test-fired in a matter of days, some doubt that the Russians will test it before President Nixon's visit to Moscow on May 22.

The recent appearance of the new missile at the test complex at Tyuratam, north of the Aral Sea, apparently resolves some of the mystery surrounding the more than 90 large new missile silos on which construction began in late 1970.

After the construction of large new silos of two different sizes had been discovered, weapons specialists in and out of Government speculated that they were designed for one of three purposes: to give added protection on existing missiles against

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attacks, to house modified versions of the two basic Soviet intercontinental missile, the SS-9 and the SS-11, or to accommodate entirely new missiles.

Most analysts now agree that while additional concrete has been poured to harden all the new silos for added protection, at least one and possibly two new missiles are involved.

Officials say that the arms limitation agreement that the President hopes to initial in Moscow would not preclude the emplacement by the Soviet Union or the United States of new and larger missiles as part of a modernization program as long as they simultaneously retired an equal number of missiles of comparable size. Presumably the new missile at Tyuratam would be considered roughly comparable to the SS-9.

Analysts said preliminary information suggested that it was designed by the team that built the SS-9, a liquid-fuel missile capable of carrying one warhead of about 25 megatons or three warheads of five megatons each. A megaton represents the explosive force equiv-

alent to one million tons of TNT.

But they do not know whether it is meant primarily to carry a larger number of warheads or a new guidance system to improve on the disappointing accuracy of the three-part multiple warhead tested on the SS-9 or for some other purpose.

"Once the test firings begin, this should fairly quickly become apparent," a State Department analyst declared.

Officials say that about 25 of the more than 90 new silos are a few feet wider than the rest. They still do not know what is destined to go into the smaller of the silos, most of which are in operational complexes that now house the SS-11.

This missile has either a single warhead of one to two megatons or a warhead of three parts each of which is in the hundreds of kilotons. A kiloton is equivalent to 1,000 tons of TNT.

Some analysts believe that a much-improved liquid-fuel SS-11 may be under development. Others expect a new generation of "SS-11 type" mis-

sile. Still others believe the Soviet Union is working on a new solid-fuel missile that will be a great advance on its SS-13 solid-fuel missile, which carries a single warhead in the five to two megaton class.

Late last month, in answer to a reporter's question, Secretary of Defense Melvin R. Laird predicted that the Soviet Union would soon start testing a new intercontinental missile. He declined to explain why he thought so, but it is now clear his answer was based on what is taking place at Tyuratam.

Some analysts suggest that the Soviet Union will begin the

tests before Mr. Nixon's Moscow trip to strengthen its bargaining position on a whole range of issues expected to be discussed.

They argue that Moscow may want to counter two recent "get tough" moves by the President. These were his willingness to risk damage to Soviet freighters by ordering air strikes in Haiphong, the main port of North Vietnam, and his decision to improve the military position of Israel relative to that of Egypt, Moscow's principal client in the Middle East, by agreeing to provide it with 42 more F-4 Phantom and more than 80 A-4 Skyhawk jets.

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Soviet Is Said to Dismantle Some of Its Older Missiles

By WILLIAM BEECHER

Special to The New York Times

WASHINGTON, March 2—State and Defense Department sources say that the Soviet Union, after years of keeping old nuclear weapons deployed even as it continued to install large numbers of newer weapons, now appears to be engaged in a significant program of retiring medium- and intermediate-range missiles.

They say that about 140 SS-4 and SS-5 missiles, with ranges of 1,000 to 2,000 miles, have been removed from sites in both the European and Asian parts of the Soviet Union.

This development, the informants say, is encouraging in that it suggests that Soviet leaders feel they have enough weapons of limited range, or that budgetary constraints are forcing them to retire some of the expensive-to-operate and less well-protected weapons, or that both factors are at work.

However, no retirements have reportedly been discerned among the more than 1,500 intercontinental ballistic missiles that can reach targets throughout the United States.

"Even if the Russians wanted to discard the roughly 220 of

their vintage SS-7 and SS-8 ICBM's, they wouldn't likely do so unilaterally while we are negotiating mutual limits on ICBM forces," a Pentagon analyst said.

By the same token, he said, the United States has been thinking of retiring its 54 old Titan-2 ICBM's, but is reluctant to do so until the shape of possible arms-control agreements becomes clearer. In general, the United States, as a matter of policy, has retired old weapons as modern replacements have been developed.

Analysts here say that the Russians, rather than scrap those SS-4 and SS-5 missiles that are removed from operation sites, are expected to use them, in a modified configuration, as booster rockets in their space program.

Officials here stressed that despite the Soviet dismantling of older missiles which was first noted in Soviet Asia in late 1969 or early 1970, the total number of missiles that can be used at medium and intermediate ranges has remained steady at about 700.

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Beginning in the fall of 1969, they report, the Soviet Union started to install some special SS-11 missiles in hardened silos in complexes in the southwestern part of the country where only medium- and intermediate-range missiles had previously been seen.

About 120 of these SS-11's, engineered so they can be fired at either intermediate or intercontinental ranges, have reportedly appeared at those sites.

Some Silos Are Empty

In addition, officials here say, many of the more than 90 mysterious new silos, in which no missiles have yet apparently been installed, have been constructed in the area traditionally used for medium- and intermediate-range missiles.

The first Soviet missiles to be dismantled, the officials report, were the approximately 70 SS-4's and SS-5's that had been deployed in the Soviet maritime provinces in Asia to cover targets in mainland China and in Japan.

One State Department official said these "might have been vulnerable to a Chinese pre-emptive strike with TU-16 bombers in the event of hostilities."

The dismantling was reportedly carried out after the Russians had built numerous airfields along the Chinese border from which its medium-range bombers could operate. This came after they had deployed substantial numbers of Scaleboard mobile missiles with a range of 450 miles there and after they had added to the number of SS-11 ICBM's, now totaling about 970, which can hit targets throughout the Far East from silos in the European part of the Soviet Union.

Most in Southwest Russia

The bulk of the Soviet Union medium- and intermediate-range missiles, more than 600, are said to be in the southwestern part of the country, where they cover targets throughout Western Europe.

Only some of these weapons are reportedly deployed in concrete-and-steel silos. Others are

above ground in what are called soft sites, informants here say, and the first 70 weapons to be retired were in this category.

It is not clear, the analysts here say, how many more will be dismantled. The SS-4 was first seen in a Moscow parade in 1961, the SS-5 in 1964.

According to Nixon Administration officials, Soviet medium- and intermediate-range missiles have figured prominently in discussions at the strategic arms limitation talks.

The Russians have argued that 500 American Fighter-bombers based in Western Europe and on carriers in the Mediterranean, which are capable of dropping nuclear weapons on targets in the Soviet Union, should be classed as strategic weapons that should be restricted if the United States wants to limit the construction of Soviet submarine missiles.

U.S. Cities Double Role

The United States contend that the planes have, among other missions, the job of defending Western Europe against Soviet medium-range missile which the Russians insist should not be considered strategic weapons since they cannot reach targets in the United States.

So far, the officials say, the issue has remained unresolved. Secretary of Defense Melvin R. Laird has said that the proper forum for this issue is the projected talks on mutual and balanced reduction of forces between the Warsaw pact powers and the North Atlantic Treaty Organization.

President Nixon is expected to discuss the prospects for such talks when he visits Moscow late in May.

It appears that the Russians besides retiring medium and intermediate-range missiles, have also begun to dismantle a small number of SA-1 and SA-2 surface-to-air missiles.

"In all, the Soviets have about 10,000 SAM's deployed and the new SA-5 can handle everything the SA-1 and SA-2 can, plus some," an analyst said. "But it's still a good sign."

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New Spy Satellites Planned For Clearer, Instant Pictures

By Michael Getler

Washington Post Staff Writer

The United States is about to embark on a major new reconnaissance satellite project which, if successful, would help the President and his top advisers avoid miscalculations when responding to sudden foreign crises.

The new satellite, still in the development stage, is meant to provide more detailed pictures from space than now possible with cur-

rent U.S. camera-carrying spacecraft.

More importantly, the new spaceborne monitors are being designed to position themselves quickly over any trouble spot and to speed their pictures back to Washington within hours or even minutes, of any order to gather this critical type of intelligence.

It now takes several days to retrieve film from existing U.S. satellites. Although there are techniques for getting the information back faster by

using television-style cameras and recording equipment, that process still takes more time than top planners would like and the picture quality is somewhat reduced.

While several days is time enough to keep watch over things that happen slowly—such as a Soviet missile build-up—it is not enough for the type of flareup that frequently takes place in the Middle East or even to keep track on an hourly basis of a mobilization

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of Warsaw Pact forces in Central Europe.

In addition to new spaceborne snooping techniques which sources describe only as "fantastic," the new satellites will be designed to translate what their cameras see on earth into electronic signals that can be transmitted to communications satellites. In this way, pictures taken on the opposite side of the world can be relayed to Washington almost instantaneously.

The basic decision to pursue development of the new satellite was made in mid-1971 at the highest levels of government, according to informed sources.

That decision reflects a view that the current array of U.S. picture-taking satellites, although extraordinarily successful over the past several years, had nevertheless been refined about as much as possible with existing techniques and that a new approach was needed.

The project is still in the research and development stage, although some parts of the system have been tested. It will be 1978 at the earliest before the new spacecraft are operational.

The Air Force is managing the project, code-numbered 1010.

The cost to develop, build and operate these complex space monitors over a ten-year period is estimated at more than \$1 billion.

Sources close to the project would not disclose precisely how the new satellites will work. But the fact that they will be constantly on call while in orbit and will be able to point their lenses and other sensing devices quickly at any trouble spot, suggests that they will fly far higher than the current U.S. reconnaissance satellites.

The higher up a satellite is, the greater area it can see. If these new spacecraft are to fly higher, that also means that they probably will carry lenses greatly improved for distance.

Aside from better optics, there are also hints that they project involves a major departure in the way the images are turned into readable pictures once captured by the lenses.

Sources close to the project stress that there are still several years of development work ahead, but, they add "We do think we know how to develop satellite with a near real-time (instantaneous) capability."

Although the Air Force project remains under tight wraps, two unofficial references have been made to it.

Last fall, Philip J. Klass, a senior editor of the trade magazine Aviation Week and Space Technology, referred to the prospects for such a satellite in one of the only books ever to be published on the entire secrecy-shrouded field of spy satellites.

Yesterday, the same magazine reported in a six-line story that a California-based aerospace firm, TRW Systems, was the front-runner in the competition to develop the new satellite.

While most of the public attention and the roughly \$40 billion spent on space by the United States since the late 1950s has been focused on NASA and the moon landing, the secret side of U.S. space activities is becoming increasingly important—although it remains highly classified.

In addition to the planned crisis-type satellite, the United States last fall orbited a new satellite—code-numbered 647—designed to give increased warning of a Soviet or Chinese missile attack. Another class of picture-taking satellite, nicknamed "Big Bird" and built by Lockheed, will soon be in orbit taking even better pictures of Soviet missile-building and dispersal. It would also be able to stay in space longer.

What is emerging, in essence, is an entire space-based defense network that does not include weapons but that would be counted upon to make sure that the terms of a hoped-for Soviet-American agreement limiting nuclear arms are not violated; that the United States has at least some warning in the event a nuclear war actually begins; and to keep watch over all the world's prospective battlefields to avoid major decisions being made on the basis of flimsy information.